
Virginia
FEBRUARY 1973
Wildlife
VOLUME XXXIV NUMBER 2
20 CENTS
JOHN W. TAYLOR

Virginia Wildlife

Dedicated to the Conservation of Virginia's Wildlife and Related Natural Resources and to the Betterment of Outdoor Recreation in Virginia

Published by **VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES,** ***Richmond, Virginia 23230***

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FEBRUARY

Volume XXXIV/No. 2

IN THIS ISSUE **PAGE**

Observations, conclusions and opinions expressed in *Virginia Wildlife* are those of the authors and do not necessarily reflect those of the members or staff of the Commission of Game and Inland Fisheries.

COVER: Cedar waxwings in the snow, by John W. Taylor, Edgewater, Maryland.

SUBSCRIPTIONS: One year, $2.00; three years, $5.00. Make check or money order payable to Treasurer of Virginia and send to Commission of Game and Inland Fisheries, P. O. Box 11104, Richmond, Virginia 23230.

VIRGINIA WILDLIFE is published monthly at Richmond, Virginia, by the Commission of Game and Inland Fisheries, 4010 W. Broad Street. All magazine subscriptions, change of address notices, and inquiries should be sent to Box 11104, Richmond, Va. 23230. The editorial office gratefully receives for publication news items, articles, photographs, and sketches of good quality which deal with Virginia's soils, water, forests, and wildlife. The Commission assumes no responsibility for unsolicited manuscripts and illustrative material. Credit is given on material published. Permission to reprint text material is granted provided credit is given the Virginia Commission of Game and Inland Fisheries and VIRGINIA WILDLIFE, but clearance also should be obtained from contributing free-lance writers, artists and photographers to reproduce their work.

Second-class postage paid at Richmond, Va.

EDITORIAL

Bums in the Boondocks

THE fall and winter of 1972-73 has been, and still is, the season of the deer spotlighter—the non-sportsman law violator who slaughters, or attempts to slaughter, deer that he catches in a beam of light at night. One hundred and twenty-four of these despicable dudes were convicted of their crime during the month of December alone. Unfortunately, some of the scoundrels also got away.

There are several reasons (but *no* excuses) for the current upsurge in spotlighting. One of the reasons, and by far the most discouraging one, is that game law violations in general, and spotlighting in particular, are simply not regarded by the community at large as the serious crimes which they really are.

There is no game law violator more deserving of condemnation and ostracism by his peers than the deer spotlighter. No game law violation is more coolly premeditated and planned than are most deer spotlighting cases. It is not a matter of being faced with a fleeting opportunity, and in the excitement of the moment making a bad mistake. The spotlighter simply is not there at night with his gun and light by accident. He is a criminal by choice, he knows it, and he not only doesn't care, he enjoys it and is proud of it! How would you like his type for a neighbor?

Well, a lot of people apparently *don't mind* having that type for neighbors, and those who don't mind are a part of the problem. We know enough about spotlighters to know that they are seldom able to keep their criminal activity secret. Almost always there are others who know about it. Some even share in enjoying the venison.

The low level of concern about the crime of spotlighting is not only reflected by the number of known spotlighters who are protected by their neighbors' silence, but probably also is reflected in the punishment meted out by some of our courts. In spite of a minimum fine of fifty dollars established for spotlighting deer by the Code of Virginia, some of those 124 spotlighters convicted during December got off for considerably less. (There are more enlightened courts in Virginia where convicted spotlighters recently have paid fines and court and replacement costs amounting to over $250, had cars and guns confiscated, and been awarded time in jail, *not* suspended—punishments we think are quite commensurate with the crime!)

Both people and courts tolerate spotlighting because it is not a crime against any individual person or his property. Since the wild, live deer is *everyone's* property, it is too easily regarded as *nobody's* property, and killing it illegally may not seem as serious as stealing a farmer's livestock. Until the community and the courts view spotlighting as an offense against us all, a contemptible and loathsome crime against society, spotlighting will continue to be a problem too big for the most dedicated game wardens in the world to solve by themselves.—J. F. Mc.

LETTERS

Correcting the Record

WITH reference to your December *Conservationgram* mention of my deer head that won the award for the largest rack of any bow-shot deer taken in Virginia during the 1971-72 season, the deer was not shot in Essex County as stated in your article but was bagged in Fairfax County. Another error was that you listed the deer as a six-pointer when it was, in fact, a ten-pointer with a 22½" spread. The rack is registered in the National Pope & Young Club records, ranking seventh (7th) nationally among all bow-shot whitetails measured in 1971-72.

Dan Holtz
Woodbridge

Aroused by Anti-Hunting Crowd

MY compliments on your fine magazine. As a fellow Virginian and sportsman I enjoy reading about hunting and fishing in the Old Dominion.

The anti-hunting sentiment lately has aroused me. Fortunately, I do not think it is so bad in Virginia, but I urge all readers and fellow sportsmen to take part as conservationists in fighting down this unfortunate sentiment by telling the truth about hunting and hunters.

Ricky Leech
Lexington

Answering the Anti-Hunters

SPORTSMEN have one answer to all the noisy nonsense currently coming out of the anti-hunting groups: Hunters Pay for Conservation. It's simple, to the point and absolutely true. Facts and figures prove it—the $108 million spent each year for hunting licenses goes to state game departments; $472 million has been collected for conservation since 1937 from the federal excise tax on sporting arms and ammunition; almost $8 million is spent each year on federal duck stamps.

To spread the word about the people who are really helping wildlife, the National Shooting Sports Foundation is offering a new "Hunters Pay for Conservation" kit. It contains a handsome, full-color 4" brassard, with gold lettering, a matching automobile decal, and a pamphlet outlining the many contributions made by hunters to the welfare of wildlife.

Individual sportsmen can display the "Hunters Pay for Conservation" emblem proudly.

Virginia's Spring Gobbler Season

Past, Present and Future

By JACK W. RAYBOURNE
Game Research Biologist

THE spring of 1973 will mark the twelfth year in which sportsmen in many Virginia counties have participated in a spring gobbler season. Most sportsmen accepted the addition of a spring gobbler season to the regular fall season in 1961 as a progressive step in Virginia's wild turkey management program. Some viewed the change skeptically, and still others were bitterly opposed to hunting turkeys in the spring. Those who opposed the season envisioned the shooting of all the breeding toms, frequent disruption of nesting activities, and indiscriminate shooting of hens and young poults. They simply could not imagine why the Game Commission should take such a "backward step" to endanger the turkey population it had worked so long to restore.

It is never easy to accept entirely new concepts, and we can appreciate the reluctance of those hunters who questioned the wisdom of the spring season. A certain amount of skepticism is a good thing. In fact, our Game Commission has the reputation of being a rather conservative organization. It has never been quick to adopt untried concepts, questionable techniques, or sweeping changes in its game management programs. At the same time, however, it has not hesitated to make sound changes which can result in better use of our renewable wildlife resources. The spring gobbler season was one such sound change. Let's look at it a little closer.

Turkeys are polygamous. One gobbler may have a harem composed of several hens. A gobbler successful in gathering and keeping a harem may fight off several intruding gobblers in order to keep his "ladies." Consequently, many toms never have the opportunity to mate and are so much "excess baggage," competing for food and range with the productive members of the turkey population.

A share of the opposition to the spring season came about from misinformed hunters who thought gobblers were needed for additional mating in the event first nest efforts were unsuccessful. The gobbler is completely expendable after mating takes place. He takes no part in the nesting and poult rearing processes that follow. In fact, during the mating period each of the hens abandons the "old boy" in search of nest sites. (At this stage, gobblers which have lost their harems respond to artificial calling.) Though additional mating may take place, it is not necessary to insure continued fertility of the eggs. Ground nesting game birds are unique in that they may store the male sperm for extended periods. Controlled studies have shown that hens without additional mating may renest three or more times with successful hatches. Therefore, after mating, if it were possible to remove every gobbler from the woods (and that would be quite a chore!) there would still be turkeys next year.

Greatest thrill: Commission member William H. West displays his 1972 spring gobbler, a nineteen pound, eight ounce Fauquier County bird, the first he ever bagged in Virginia.

Possibly the greatest single objection to the spring season is that it seems "unnatural" to hunt any species during that time of the year. Through years of tradition, we have accustomed ourselves to believe that fall is the only time to hunt. It seemingly "goes against the grain" to hunt during the reproductive period of an animal. Yet, this is exactly what we do when we hunt deer during their November-December rutting period! A buck is at his prime during this period. Removal of surplus animals insures better survival for those that remain, and with proper timing reproduction is not harmed. No one would question that the majestic wild turkey gobbler is at his prime in the spring. We have already discussed how removal of surplus toms benefits the population, and when the spring season is properly timed, there is no harm to reproduction.

Biologists recognize that under certain situations turkeys may abandon their nests. Therefore, it is essential that the hunting dates and hunting hours be properly timed. In Virginia the spring season is planned to coincide with that period when the majority of hens already have mated and have finished laying, and have begun incubating. This period extends roughly from mid-April through May when most hens are on nests and largely unavailable for accidental shooting. As an additional safeguard, daily hunting hours are limited, reducing the chance of nest disturbance.

On rare occasions a wandering hunter may accidentally flush a hen from her nest. However, this does not always mean that she will abandon it. If a man, vehicle, predator, etc., flushes a hen from her nest during the early days of "setting," she may abandon the nest site. If she is flushed near the middle of the incubation period, the chance of abandonment is reduced. As the time for hatching draws nearer, the danger of abandonment decreases sharply. In fact, some birds near the end of incubation have been flushed two or more times and have returned to hatch their eggs. In a turkey study involving several hens in Augusta County this past summer, one hen was flushed from her nest on May 9, 11, and 16, and succeeded in hatching her clutch of eleven eggs. Two similar instances were reported in southwest Virginia this summer. Forest workers cutting unmerchantable trees left by loggers accidentally flushed two hens from their nests. A tree actually fell across one nest, and both hens returned to hatch their clutches of seven and nine eggs.

If a hen's first nest is destroyed or abandoned, there is every indication that she will make a second nesting attempt. Generally, however, second nests do have smaller number of eggs. A marked hen in Augusta County this past summer abandoned her nest of 11 eggs when flushed accidentally on May 8th. She renested in a nearby area and was watched until she hatched her new clutch of eight eggs on June 25th.

Virginia's spring gobbler season didn't just happen! Biologists and game managers spent a great amount of time afield gathering information on such things as gobbling intensity, peaks of gobbling activity, nesting and incubation information, etc. Additional experiences and results of spring seasons from surrounding states in the range of the eastern wild turkey were evaluated. All of this information was carefully weighed before the first spring gobbler season was recommended. Since the beginning of Virginia's spring season in 1961, there has been no evidence that it has harmed the turkey population in any way. Neighboring states report similar results and not one Game Department that has started spring seasons has stopped them, nor indicates a desire to do so. Turkey populations continue to increase and many game officials and sportsmen are sold on spring seasons.

The Commission of Game and Inland Fisheries has taken all precautions, through proper timing of this season and prescribed hunting methods, to reduce intentional and unintentional disturbance or killing of hen turkeys by the hunter. If hunting is done properly, by calling, the chances of accidentally shooting a hen are nil. There is one thing we can guarantee with absolute certainty, if you abide by the "rules of the game" of the spring hunt: the first strutting tom you call within gun range will be the highlight of your hunting career, even if you miss!

MUSKIE—CRAFTY FISH WITH BULLY SPIRIT

By BILL COCHRAN
Roanoke

PERHAPS catching a single muskie doesn't make you a muskie fishing expert anymore than does a single swallow make summer. But catching a muskie in Virginia, or anywhere else, for that matter, sets you apart.

There are two groups of fishermen: those who have caught muskie and those who haven't. I must confess, although I fish more than average, and in a number of states, for a long while I was counted in the "those who haven't" class.

An angling friend of mine took considerable delight in this. It seems shortly after these elongated, toothy characters were introduced into Smith Mountain Reservoir, he lucked into one. It was a windy day, and he was bobbing about in a small boat. If the truth were known, he was making his way to sheltered water, having forgotten all about fishing. His rod was propped on the gunwale; his lure dangled in the water.

Suddenly, the rod became a wild, thrashing thing intent upon leaping into the water. My friend grabbed it, and, as you've already guessed, reeled in a muskie—his first.

It was a modest fish, as far as muskies go, a half-inch under the 26-inch minimum size limit. He had to release it. But it was a muskie, nonetheless. And it set him apart. Never mind that I had caught landlocked striped bass five times as large. My friend was a muskie fisherman. He had done battle with the heavyweight champ of the fresh-water world. He had landed the monarch of game fish. It was something he didn't let me forget.

As outdoor editor of the *Roanoke Times*, I probably have endured as many muskie—call him muskellunge, if you prefer—tales as anyone in the state. Our city is in the heart of Virginia's muskie country. These sullen characters even sulk about in our water supply impoundment. And every muskie ever caught is a story to be told, a story to be listened to.

One thing that I have learned, being a listening post for wide-eyed muskie catchers: Most of the time old *Esox masquinongy* is caught by chance. I've heard the same story, time and again. The guy explains he was out after bass or crappie or catfish when suddenly the water exploded around his lure, as if someone had thrown a stick of dynamite, and a great fish arrowed skyward, like an airborne crocodile, mouth agape, teeth showing, eyes fiery. The fisherman is never the same again.

This long-jawed lunker was caught during a Smith Mountain Lake fishing contest.

It got to the point that the story became so repetitious in my ear that I began to believe the best way to catch a muskie is not to fish for him at all. Take when the record was set at 29 pounds. The lucky and surprised fisherman was out after dark catfish angling, minding his own business, casting minnows along the bank of Smith Mountain Reservoir near the mouth of Gills Creek. The monster he hooked was so big he had to send his partner hotfooting it to the car to get the minnow seine for a landing net. And the record before that, 20 pounds 8 ounces, was caught by a man quietly crappie fishing.

Maybe all this is trying to tell fishermen that muskie are so smart the only way to catch one is to pretend you aren't fishing for him, to act as if catching a muskie is the farthest thing from your mind. It may be wise to disguise your tackle also. The customary outfit for muskie fishing would be a stiff rod, husky reel, stout line and steel leader. But the 16 pound 2 ounce muskie that won a contest at Smith Mountain Reservoir was caught by a man fishing with ultralight tackle and cobweb-size four-pound line. Impossible—but it worked.

Then, too, if you were going out specifically to fish for a muskie, you'd probably seek out some remote, deep hole, a lair hidden from the casual eye. But you'd be

Young muskie being harvested from Buller Hatchery for stocking across the state.

wrong. A muskie, apparently, would be too smart to be there. He'd be sulking quietly beneath some busy dock within the belch and roar of hundreds of boats filled with anxious anglers rushing way off to somewhere where the fish are.

With nothing better to do one early May day, 13-year-old Allen Whitfield went down to Saunder's Marina dock on Smith Mountain and cast a lure, promptly landing an 11 pound 5 ounce muskie. The Sunday afternoon boating traffic was extra heavy, whipping the dock area to a froth, because there was a fishing contest that had attracted over 1,000 anglers. Certainly, it was no place for a muskie, one of the wildest of nature's creatures.

Some anglers, it is gratifying to know, actually fish for muskie, and catch them. Rufus Eubank, who guided bass fishermen on Smith Mountain Reservoir for about five years, often would have a muskie swirl at his lure. Rufus would mark the spot in his memory, then slip back a few days later. It seems once a muskie stakes out a place to his liking, nothing can make him move, unless it's a bigger muskie. If he's there one day, likely he'll be there the next, and possibly in a better hitting mood. Rufus caught a number of muskie this way, before moving his guiding service to Kerr Reservoir.

Even ballpoint pen-sized muskie has swaggering, bully spirit.

A couple seasons back, it was common knowledge among the regulars who fish Carvins Cove, Roanoke's water supply lake, that a lunker muskie, long as a tall man's leg, lived in the shadowy water beneath a steel dock. Sometimes, when the sun was just right, an angler could peer down into the deep, clear liquid, and there he was, big as a chunk of two-by-six plank, his lower jaw undershot like a bulldog. There was both an air of beauty and fierceness about him, and it struck desire in the hearts of those who observed him.

Getting him to strike, though, was something else. No telling how many baits and lures he had disdainfully ignored. Weekend anglers dangled them around the dock by the scores. And some of the best fishermen in the area would stalk the dock and skillfully send a lure into the muskie's haunts, and come away luckless and humble. The muskie only continued to lay on inches and pounds and wisdom, living a lone wolf existance, solitary and crafty.

Then one spring day, along came Barrie Whitt. From Roanoke County, Whitt is one of the regulars at the cove. Through long hours, he has learned some of the secrets of this impoundment, which can be baffling at times. Six months before, he had landed two giant brown trout, their sides peppered with black spots almost the size of dimes. One weighed seven pounds one ounce, the other a half-pound less.

Whitt had spotted the muskie a couple times the fall before, but was yet to observe him this spring when he arrived at the cove about noon one day. He decided to cast a couple times beneath the steel dock before launching his boat for an afternoon of crappie fishing. He put on a country-boy's bait, a soft shelled crawfish, and made a cast. Nothing. He cast again. The muskie seemed to coil his 40 inches into an S-shape and strike like a snake, engulfing the bait in his expansive mouth.

It was then that Whitt realized he was in a predicament. He had on his six-pound test crappie line. The only thing to do was to let the fish take his time and fight as long and deep as he wished. Whitt did just that. Forty minutes later, the 17 pound 12 ounce trophy was his, and the water beneath the steel dock had lost its challenge.

Nowhere has the muskie done better than at Smith Mountain Reservoir, along the foot of the Blue Ridge southeast of Roanoke. A look at the Commission of Game and Inland Fisheries fish citation records reveals that this 20,000 acre impoundment has been pro-

Fishing guide Rufus Eubank checks out spot muskie calls home.

Muskie **(Continued from page 7)**

ducing 50 percent of the muskie citations. Not only does it produce the most, but on the average also the largest. Smith Mountain has yielded the muskie record for a number of years, until last June when J. L. Vedder of Gretna caught a 30-pounder in downstream Leesville Reservoir. Some believe this 44-incher got its start in Smith Mountain and migrated through the dam.

Apparently what was even a bigger muskie was discovered floating dead on Smith Mountain the past summer by Mac Grisso, Jr., of Roanoke. The fish measured 48 inches in length and was estimated to weigh in excess of 30 pounds. A scale sample sent to William Neal, state supervising fish biologist, showed it to be age six years plus. A portion of the fish had been cut away, as if it had been struck by a whirling boat propeller. Some observers say muskie are fearless and fierce enough to do just that.

Last July, I visited Buller Hatchery, near Marion, site of the state's muskie rearing program. Peering into holding ponds viewing muskie about the size of a ballpoint pen confirmed my belief that here is a fish with a crafty nature, a morose spirit. I had the feeling that these young fish were peering right back at me with a baleful and savage stare.

When you approach one of their holding ponds, young muskie don't come swimming up for a friendly handout like trout. Nor do they dart off in fear like wild salmon. They remain motionless along the pond's edge. They show no fear. I tried to outstare some of those at Buller. I peered so intently that I almost had the tip of my nose dangling in the water. They displayed no emotion, other than that of a swaggering, remorseless bully. A fish just isn't supposed to be bold like that!

Sticking your nose into the water is probably a dangerous practice around muskie. They are cannibals of the worst kind. There at Buller, Dixie Shumate, Jr., state supervising fish biologist, told me that it takes about 150 minnows daily to feed a growing muskie. If minnows aren't available, muskie don't stand in wel-

Dixie Shumate, Jr., and Buller Hatchery Manager J. S. Currin peer into muskie rearing pond.

fare lines. They simply turn on their brothers and sisters for a meal. "Let one get a quarter of an inch smaller than the others and bang, he's dead," says Shumate.

You'd think a fish that eats like that would be gullible enough to gobble up every lure and bait tossed in his direction when released into fishing waters. But it doesn't work that way. Adult muskie apparently motionlessly sulk along the shoreline for days at a time without feeding. When they do decide to feast, woe is the fish, frog or duckling that happens nearby. Few things, including monofilament line, are a match for their grabbing and cutting teeth—unless is is a whirling boat propeller.

Muskies seldom become abundant, even in their native country. Most fishing authorities estimate that it takes 100 hours of concentrated angling to catch one. That's probably conservative. They seldom go about in schools like bass. This has made what has occurred along the James River in Botetourt County a strange happening. February 1969 some 50 to 100 muskie,

ranging six to nine pounds in weight, were landed in about a three-mile stretch from Springwood downstream to Interstate 81 Bridge. For a time, nearly every day someone was hauling a long-jawed fish out of the river. Trophies were suddenly as common as sunfish. Then the peak ended as rapidly as it had begun. The next winter, a lesser peak occurred, and the next, still lesser. But fishermen still talk about it and still cast lures when the winter sun glitters on the cold water.

The James remains a good muskie stream, probably the best in the state. For a longer time, it has been a good smallmouth bass stream. Time was, when most smallmouth anglers floating the river would be using flyrods and popping bugs. But the muskie has changed that in the section I fish. The fact that these big, toothy characters lurk in the ebony waters of the stream has caused many fishermen to put away their flyrods and popping bugs and go to heavier spinning tackle and larger lures. Of course, confirmed bass men are out

Muskie like this were common for several winters along reaches of the James River.

there after a smallmouth. But they have muskie on their mind. They have to admit that there is something exciting, perhaps romantic, about the thought of landing a muskie.

I acknowledged this to my fishing partner, Bob Adams, one day in early September as we launched a 14 foot johnboat for a six hour float. Both of us admitted to being bridesmaids when it came to muskies. With this in mind, I tied on a 4½ inch Rebel plug and cast it to the edge of a weedbed shrouded in the typical early morning fog that enfolds the river. A foot-long bass grabbed it almost before it hit the water, jolting my rod into an arch.

The action was repeated along the edge of several other weedbeds, but one in particular will be etched in my memory forever. I sent my lure to its edge and before the water could swallow it up there was a long, gurgly, heart-pounding swirl. I had been looking for a four-pound-plus smallmouth and figured I had him hooked.

"I may need the net on this one," I told Bob, trying to act calm and modest. The long-bodied fish swam intently downstream, then I turned him, pressuring my eight-pound monofilament to the breaking point. He swirled to the surface again and reluctantly came toward the boat.

"It's a good bass," I told Bob. But no.

"A muskie!" I shouted, seeing the fish for the first time.

Bob eased the gaping net under him. He was 22 inches long, four inches under legal size. But he was a muskie just the same. No longer was I a bridesmaid.

We admired his rugged beauty for a few seconds as he lay quivering on the bottom of the boat. Then I carefully returned him to the stream. Watching his long form swim away, I realized that every angler should have a muskie to his credit and every muskie should bear a few battle scars. We were both better for it. Neither of us would ever be the same. At least, I knew I wouldn't.

Bob Adams casts in the James above Springwood near where author lost his "bridesmaid" standing.

A BIRD IN THE BUSH

By EDWARD W. BENINGTON
Alexandria

WE were delighted when we found what we were looking for: a little more than an acre just beyond suburbia in the Lord Fairfax land of Virginia. We could look forward to quiet, weekend tasks with occasionally invited guests. Little did we realize that within a few months we would be hosts to over three hundred curious people attracted by an uninvited but nonetheless welcome visitor.

Regarding the place itself, the house is hardly worth mentioning: clapboard coming apart at the seams, a cellar that welcomes every good rainstorm, and an attic full of wasps. The only indication of its age was on a stout old beam in the basement where someone had once written "repainted 1919." We actually did not buy the house for itself, but rather the lot that came with it. It was terribly overgrown in a tropical sort of way with spiraling honeysuckle taking over many of the trees and the hairy stems of poison ivy, sometimes four inches thick, growing on dead locusts. There was evidence, however, that sometime in the past someone else had loved it, for there was an abundance of periwinkle, Rose of Sharon in ten-foot bushes, and ivy growing on and under a crab apple tree, around the old carriage steps and up the path to the porch. Forsythia grew in great clumps and lilacs could be cut from the second floor. A grotesquely shaped Seckel pear tree and an old privet hedge at least fifteen feet high with a dogwood holding its own right in the middle were an added bonus. This was the lot we liked so much, the lot that made us buy the house.

In addition to all this there was a great variety of birds; more than most bird-watchers see on many a long walk. We built a few feeders, of course. Nothing fancy; one just a flat board on a stump with ordinary mixed wild bird seed. This is always augmented during the winter months with some suet in log feeders, simply made by drilling a few holes in a short rather thin log or some left-over wood. My wife, Mary, is the real birder in the family with an inherited interest fostered by her father, an Ontario naturalist, and whetted later on by a pair of binoculars and a membership in the Audubon Society. Some of this has rubbed off on me, a Brooklyn boy brought up in a big city, who once believed that all birds were English sparrows. My knowledge is still very elementary although improving a bit. During our first year, thirty-six varieties were seen between Thanksgiving and New Year's.

It was in January that it arrived. My associate of many years was looking out the dining room window when a quizzical "I can't believe it" look took over. "It looks like a brown-capped chickadee," she cried in amazement, "but it should be up in Canada." We were used to the Carolina and the black-capped, but not this brown one. Now anyone with even an elementary knowledge of brown-capped chickadees knows that there are two types, both members of the titmouse family: the *Parus hudsonicus hudsonicus,* or more familiarly, the Hudsonian, and the *Parus hudsonicus littoralis* or Acadian. With my broad Brooklyn ornithological background, I immediately classified it as an Acadian. Mary, however, wanted to confirm it was at least a brown-capped chickadee and hurriedly called an officer of the Audubon Society. Within twenty minutes he was there and his confirmation led us to celebrate, especially when he told us it was the first one ever seen in Virginia. Either this winter was exceptionally cold or this little fellow had strayed far from the flock, but we definitely had established a record. Cheese, crackers and sherry were brought out before you could say *Parus hudsonicus hudsonicus* or *littoralis.*

We naturally wanted to share our find with other birders, so when the president of the Society approached us before the monthly Audubon meeting a few days later and asked if it could be announced, we readily agreed. At that point I felt as though I were personally responsible for this little bird's presence at our home. When the news was out, a gentle murmur ran through the audience. Nothing extraordinary; no applause; just gentle excited murmurs.

As my birding partner and I live on an unmapped road, I had suggested at the meeting that anyone wanting to see our bird had better call first for directions. This branch of the Society has many members, so many in fact, that two sessions are held to accommodate them. It must have been at the second round-up that someone muffed our phone number, because a few days later a most bitter and angry voice called the Society to ask if this were a joke; people phoning at all hours asking something about a brown-hatched rickety. He thought it had gone far enough!

The following Saturday we were hardly awake when a car came in the driveway, closely followed by another and then another. Dressing hurriedly and putting on the coffee which is essential in such crises, I went out anticipating what was coming. When you see people getting out of cars with binoculars and heavy walking shoes, you just know they know. I suppose they ex-

Photo by Karl H. Maslowski

Brown-capped (boreal) chickadee.

pected a safari into the bush with machetes and bearers. But not for our *Parus hudsonicus littoralis*. It was as obliging in its appearances as any ham actor. It flew from the forsythia to the lilac to the Norway maple, all within a range of less than thirty feet. On the maple there were two icicles of clear sap to which the bird would flutter for a drink now and then. We literally got out the lawn chairs for the watchers. Some people had to back away as their binoculars were too strong!

When the first people arrived, Mary thought it would be nice to serve coffee as the weather was quite nippy. I'm not sure how many pots she brewed, but we ran out of all kinds of coffee. People came all that day and for many days more; nice people, enthusiastic, interested and interesting, from all walks of life and from early teens to late seventies, and all with a common interest. Still cameras were focused on the suet log by people working in shifts. One man spent the better part of a day and a lot of patience sitting behind two movie cameras, black and white and colored, aimed at this spot. An expert on banding birds also appeared with traps and bait. Although the bird itself might have cooperated with this idea of contributing to the study of migrations, we were not too enthused and therefore declined his offer. We were not about to subject our unique visitor to the traumatic experience of being caught and banded, even if released later.

The little visitor stayed exactly two months and brought us a great deal of pleasure. It was also responsible for some rather amusing incidents. One evening a nature club leader some thirty miles away called to find out if it would be convenient for his group to come down the following day. As there are various types of nature clubs, from nudists to naturalists, I uncrossed my fingers the next day when about forty people disgorged from eight cars, all fully clad. I took a deep breath, went out and introduced myself. The two obvious leaders stepped forward and explained the members' interest in birds and this one in particular.

Never having spoken to an organized group such as this, especially on a subject about which I was not exactly an authority, I offered up a little prayer to John James Audubon and expounded at length on the coloring, size, and eating habits of the brown-capped chickadee. They listened most attentively, almost with awe and had no questions. Next, I suggested they line up about twenty feet from the feeder which they did dutifully. No bird. I put more feed on the feeder, stepped back, and still no bird.

Now a few days before, a really red convertible had been parked in the driveway and the little fellow would not come near the place. After the car had left, *Littoralis* came in. Drawing on this experience, I called the group's attention to the various vivid colors of their sweaters, skirts and coats, and suggested they retreat about twenty feet further to the pear tree. Almost immediately the brown-cap arrived. There were great murmurings of ohs and ahs and whisperings too. To many of them this meant seeing a new bird, another find to add to their "life lists." However, I like to think that some of them were amazed at how much this man knew about birds, especially the brown-capped chickadee, the Acadian, of course.

Our little feathered friend accepted our hospitality, our food and our interest from January to March. Then perhaps he sensed spring in the air, remembered that spring is awfully nice in Canada, and disappeared. We feel sure he flew north, with possibly a dip of the wing. After all, he'd never had it so good. Nor had we.

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Scholarships

A limited number of scholarships to cover tuition, meals, and lodging will be available to Virginia school teachers from funds provided by several interested organizations. All Virginia school teachers are eligible to apply. In order for a scholarship application to be considered, it must be received by May 1, 1973.

To apply for enrollment in this course, check the college of your choice, tear off this coupon and mail to: Virginia Resource-Use Education Council, c/o E. W. Mundie, Seitz Hall, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061. Be sure to mark the college of your choice.

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CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

PHEASANT HARVEST DOUBLES. With a full 6-day season to pursue their quarry, Virginia pheasant hunters managed to bag 433 cocks, nearly double the total for last year's two-day season. This preliminary total includes a record 171 from Page county, 76 from Loudoun county, 61 from Shenandoah county, and 40 bagged in Rockingham county. A total of 16 pheasants from the southwest Virginia counties of Scott, Smyth, Wise and Wythe is the strongest showing from that section to date.

SNOWSHOE HARE STOCKED IN VIRGINIA MOUNTAINS. The Virginia Wildlife Research Unit at Blacksburg will release up to 300 snowshoe hare in selected portions of Giles County during the next two winters to determine if this interesting game animal can be reestablished, reports Dr. Burd S. McGinness, Unit Leader. The animals will be released at high elevations near No Business Creek, Dismal Creek, the North Fork of Stony Creek, Max Meadows and Man's Bag near Mountain Lake. Beginning December 9 some 20 to 25 hare were released at each site with similar follow-up releases scheduled for March, 1973, and March, 1974. Each animal bears a colored plastic ear tag attached with an aluminum rivet marked VPI. Some of the hare will have radio transmitters attached. Persons who see these animals or recover tags are urged to contact VPI or the Game Commission.

The snowshoe or varying hare apparently was native to elevations above 3,000 feet in most of Virginia's mountains. The snowshoe has apparently been reestablished in Highland county following a release of animals in 1958. Studies of habitat requirements show no apparent competition with white-tailed deer, grouse, or cottontail rabbits. The hare inhabit areas with dense thickets of mountain laurel and rhododendron and feed extensively on buds, bark, roots and stems of woody plants, especially in winter.

Following release the hare will be closely monitored to determine behavior, dispersion, home ranges and reproduction in their new habitat. Field observations will be supplemented by trapping, radio telemetry and trailing with beagle hounds.

WESTERN DEER KILL UP. A total of 15,268 deer bagged during the two-week season west of the Blue Ridge came very close to Game Commission estimates. Decreases from last year's totals were noted in Alleghany and Augusta counties, with slight drops also in Bath and Clarke counties. The total represented an increase of slightly over 1,000 above last year's total for the western portion of the state.

Non-resident license sales were down in Alleghany, Augusta and Bath counties, and this apparently had some effect on deer harvest. A higher priced Virginia non-resident big game license plus the adoption of a nearly identical season in West Virginia may have contributed to this decline. Hunting pressure generally appeared to be lower in these counties although there is no way to quantitatively measure it.

TROUT STOCKED IN RESERVOIRS. Over 60,000 trout have been stocked by the Virginia Commission of Game and Inland Fisheries in reservoirs around the state this winter. Lakes included on the list were Flannagan, Carvins Cove, Philpott and South Holston. Smith Mountain and Claytor lakes were not stocked this year because returns from previous releases were low and fisheries biologists have found that summer conditions in these lakes are not suitable for trout.

HOW OLD?

By WILLIAM F.
and JAMES A.

Division of Forestry an
V.P.I. & S.U.,

A HUNTER has just brought a deer into a big-game check station. Prying open the jaws, a Game Commission biologist peers inside and seconds later announces that the buck is 2½ years old. Statements like this seem to amaze hunters, yet there is nothing magical about examining a deer's teeth, noting the dental patterns, sequences of tooth eruption and wear, and, from this data, determining the age of the animal with reasonable accuracy. This and other techniques are used repeatedly by wildlife biologists to determine the age structure of wild animal populations. Using data on the age composition of a population,

In the juvenile squirrel (left), dark bands show on the ventral side of the tail and the "tail bone" is visible. In the adult (right), dark bands are absent and the "bone" is fully covered by hair.

along with information about sex ratios and birth and death rates, wildlife managers can examine the history of an animal population, make predictions concerning the future of the population, and decide about future management strategies. Aging the members of a population is of extreme importance in the successful management of that population.

But what was the game biologist looking at in the jaws of the deer? In this region, the majority of fawns are dropped in early June. Hence, deer sampled during the hunting season (November-December) will, of

(Above) From top to bottom, these are jaws of 6-½, 2-½ and ½
present an uneven outside contour (left) w

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dlife Sciences
sburg

old deer. (Below) When spread, the tail feathers of a juvenile turkey
ose of an adult form a nearly perfect arc.

necessity, be in one of the following age groups: ½ year, 1½ year, 2½ year, and so on. The lower jaw of a fawn (½ year) typically has four teeth, disregarding incisors. Counting from front to rear, there are three premolars (because of the evolutionary loss of number 1, they are numbered 2, 3, and 4) and one molar. In the fawn, premolar #4 is tricuspid or three-pointed.

At 1½ years, lower jaw has six teeth, three permanent premolars (2, 3, and 4) and three permanent molars (1, 2, and 3). At this age, premolar #4 is bicuspid or two-pointed, and molar #3 is only partially erupted.

By 2½ years, the lower jaw has a full complement of three fully-erupted premolars and three fully-erupted molars. The lingual crests of the molars are sharp, the

The outer primary wing feathers of a juvenile turkey are pointed and lack complete barring. Those of an adult are rounded and barred to the tip.

dark lines of dentine showing on the grinding surface of the teeth are narrow, and very little tooth wear is evident. From this age on, deer are placed into age categories by the degree to which the grinding surface is worn down. Note in accompanying photo the degree to which the teeth of a 6½-year-old deer are worn.

In many mammals, such as the bear, there are annual deposits of cementum on tooth roots and annual deposits of dentine in the pulp cavity. In sectioning a bear tooth, annuli (similar to the growth rings in trees) of alternating dark (winter) and light (summer) may be found. By counting the number of dark

annuli plus one, the age of the bear is determined.

Examination of long bones (humerus and femur, for example) allows one to categorize mammals as young-of-the-year or adults. In juveniles, there is a cartilaginous zone present between the bone cap and shaft. As the animal matures, this "epiphyseal cartilage" is replaced with bone, and the cap and shaft are completely fused.

In the gallinaceous birds (quail, grouse, partridge, etc.) a crude method of aging may be employed by the hunter. Grasp the lower jaw and shake the bird; in juvenile birds, the jaw usually will break or bend, while in older birds, the jaw will remain rigid. A more exact method of aging these birds involves the examination of primary feather replacement. All gallinaceous birds molt their wing and tail feathers in sequence. In most species, replacement occurs up to the eighth primary feather in their first hunting season, with nine and ten being replaced a year later. The ninth and tenth primaries in juvenile birds are somewhat more pointed at the tip and lack barring, while in the adult they have rounded tips and are completely barred. Irregular replacement of the tail feathers (retrices) in the wild turkey causes first-year turkeys to have an unequal contour upon spreading the tail feathers. Doves, though not gallinaceous birds, may be aged readily by examining the replacement patterns of primary feathers.

Unlike the sequential molt in the gallinaceous birds, the wing and tail feathers of waterfowl are all molted at once. Other techniques are used to age these birds. Examination of the cloaca (a common opening for the reproductive tract and for the elimination of wastes) and the structures within is used for determining both sex and age of waterfowl. Plumage characteristics are also employed to age waterfowl. Young birds often retain some juvenile plumage after the prenuptial molt, thus distinguishing them from older birds.

Only a few techniques for aging wildlife have been mentioned, but a host of others exist. The weight of the eye lens in rabbits and squirrels is used to age these animals. Horn growth in sheep and goats indicates age and range conditions. The examination of skull sutures, pelage characteristics, X-rays, body weight and molt patterns are other methods of aging wild animals.

It must be kept in mind that range conditions, climatic changes, and the health of individual animals may singly or collectively alter the accuracy of the aging methods. Whenever possible, a combination of aging techniques is employed. More complete information on aging methods and their importance may be found in the following books:

Leopold, A. 1933. Game management. Charles Scribner's Sons, New York, 481 p.

Taber, R. D. 1969. Criteria of sex and age. p. 325-402. *In* R. H. Giles (Ed.) Wildlife management techniques. 3rd. ed., The Wildlife Society, Washington, D.C.

E.D.P. and Fishery Management

By JAMES R. ZUBOY, ROBERT T. LACKEY, NORVILLE S. PROSSER, and RAYMOND V. CORNING

EFFORTS to improve fishing once consisted of stocking fish or imposing regulations based on only a few, perhaps questionable, facts. With plenty of fishing water and relatively few anglers, this approach was not as bad as it sounds. Nevertheless, today the fisheries manager is faced with tremendous public fishing demands, especially in areas near population centers, and managing by the "seat of the pants" will not suffice.

To meet public demands for fishing, the Virginia Commission of Game and Inland Fisheries initiated an ongoing program for construction of small impoundments, generally near population centers. However, once a lake site has been selected and the dam built, the real work of the fisheries manager begins.

To provide the best possible fishing, Commission biologists must supplement the old standards with the latest management techniques. Even though biologists now have an impressive bag of tricks, the real problem is knowing when to do what—enter E. D. P., *electronic data processing.*

Fisheries managers today often use computers to facilitate data processing. In fact, if you have recently fished one of the Commission-owned lakes, you may have had a creel survey clerk check your catch and record the results on a computer card. This is one part of a state-wide program to improve management of fishing lakes by the employment of electronic data analysis.

Let's look at one of Virginia's intensively fished management units, Lake Brittle, the site of a cooperative research project between the Commission and VPI & SU. Lake Brittle covers 77 surface acres and is located in Fauquier County, approximately 30 miles from Washington, D.C. The lake receives very heavy fishing pressure (nearly 45,000 fisherman hours in 1971) due to its proximity to metropolitan areas. Prior to 1970, creel census at Brittle was a tortuous opera-

Mr. Zuboy and Mr. Lackey are with the Department of Fisheries and Wildlife Sciences, Virginia Polytechnic Institute and State University, Blacksburg. Mr. Prosser and Mr. Corning are with the Fish Division, Virginia Commission of Game and Inland Fisheries.

Photo by David H. Bennett

Results of computer analysis may show need for chemicals to control overpopulation problems or increase fertility.

Photo by William T. Bryson

The ultimate goal of electronic data processing in fishery management—more memorable fishing experiences.

David Bennett Photo

tion. All information on fishing was recorded in longhand. The district fisheries manager later spent many hours over a desk calculator analyzing data. Often the analysis took so long that it became of little use in his management decisions.

Computerized creel census methods were installed at Lake Brittle in 1970 as a prototype for possible statewide implementation. Early development work was carried out in cooperation with the Southeastern Cooperative Statistical Unit located at North Carolina State University. A simple computer card on which data were recorded with a soft lead pencil replaced the longhand method of recording. The ready marked cards made subsequent analysis a simple task. Informa-

Photo by James R. Zuboy

Lake Brittle, located in Fauquier County, is the site of a study using computers to improve fishing.

tion recorded on each card included date, type of fishing (boat or shore), how far the fisherman traveled to get to the lake, number of fishermen in the party, total hours fished, species caught, and number and weight of the catch. Later development work has been carried out with punch cards replacing pencil marked type.

The system at Lake Brittle now works in the following manner. Each visiting fisherman is required to stop at a check station before fishing begins, and at the close of a fishing trip. You (the angler) report your catch to the creel census clerk and he punches the information into a computer card. The cards are sent to VPI & SU, where the computer, in a matter of minutes, does what formerly took a man with a calculator many, many hours or days to complete. A tabulated printout of desired information is returned to the fisheries manager within a matter of days (the greatest delay being mailing time!).

What type of information is returned to the manager? He gets a complete breakdown of all catch data by species. For instance, the computer tells the manager the total number and weight of bluegill taken from the lake, the number and pounds caught per acre, and the

average number and pounds caught per hour. The manager will have this information for every species and a total for all species.

How Does All This Improve Fishing?

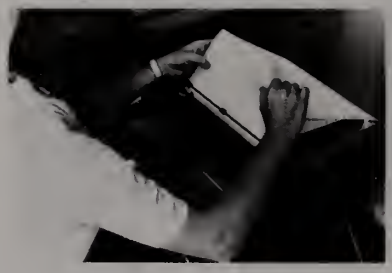
Consider a fishery such as Lake Brittle, which is owned and managed by the Commission. Suppose the creel census showed that there was an exceptionally large number of bass present at a particular time. The current creel limit on bass could be liberalized to capitalize on the presence of an abnormally large population. When the analysis shows that the catch of bass is leveling off, the prior creel limit could be reestablished. Then again, suppose bass are numerous but not of the desired size. This may then call for a minimum size limit regulation to allow the bass to obtain a larger average size. On the other hand, the analysis might indicate an extremely poor year class of bass. This might warrant a temporary reduction in the creel limit and additional stocking.

The method of constant creel data survey is especially valuable for determining the success or lack of success for any fish stockings made during a given year.

Lakes such as Brittle often become overpopulated with stunted panfish. The computer analysis would indicate when the average size of panfish was declining and the manager would be prepared to take corrective action before major stunting had taken place. In a stunting situation, selectively eliminating part of the stunted population would allow the remaining fish to grow to a larger size. However, to make such a decision the manager needs good up-to-date data, the kind provided by computerized creel census methods.

So, next time you wearily walk up to that creel census station in order to have your catch checked, think of the possible benefits to your future fishing. You are helping the Commission to scientifically manage the lake and provide the best possible fishing.

Data from computer cards sent directly to VPI & SU are fed in, and printouts carefully analyzed to spot trends in the fishery. Computer does in seconds what once took biologists weeks to accomplish.



Go Ahead, Be An INFORMER! The Game You Save May Be Your Own

By HARRY L. GILLAM
Information Officer

LEGITIMATE hunters often feel that they are powerless to stop the illegal activities of other hunters even though they heartily disapprove. Oftentimes a little shrewd observation followed by prompt notification of the game warden can bring rapid justice as exemplified in the following cases reported by Game Warden Fred Hottle of Shenandoah County.

"I got word that a young man had killed a deer illegally during the early squirrel season," Hottle says. "I went to the grandmother's house where the subject lives and knocked on the door. The grandmother informed me that the grandson was not home at the time. I returned that evening and a 15-year-old girl accompanied by two younger girls answered the door. She said that he still wasn't home, but one of the young girls said he was out at the barn. I walked to the barn to investigate and through an open door in the back I saw a skinned deer hanging up and three boys busily cutting off the front legs. "Boy, you really caught us red-handed," one of the boys said, as I walked in. It was a 5-point buck, and after confiscating the carcass, head and hide, I charged them with possessing an illegal deer in the closed season, killing deer without a big game license, and assisting in dressing an illegal kill.

In another instance Hottle relates, "One morning the Sheriff's Department informed me that two boys had reported an illegal deer kill. I talked to them and they told me they had parked their truck near a car on Laurel Run and proceeded up an old wagon road to hunt squirrels when they encountered another young hunter coming down the road. He informed them that hunting was no good and suggested they not bother going on. They heard him get into his car and leave. When they reached the ridge top, they saw a freshly killed deer lying alongside the road. They then remembered hearing two shots just before meeting the other hunter. They had just walked back down to their truck when the other car returned with two boys in it. They took the license number and turned it over to me."

"After getting the subject's name and address from the license number," Hottle said, "I proceeded to his house but the car was not there. After a little searching I located the car at his father's residence, but when I went to the door his mother said he was not there. Saying that I preferred to look around a little to satisfy myself of that, I walked around to the back of the house and, through an open cellar door, I saw the skinned deer with the front quarters cut off. Upon entering I saw three men with blood on their hands standing by the carcass. The subjects were arrested and charged with illegally killing and dressing a deer during the closed season."

The next time you see evidence of a violation, don't just grumble about it to your friends and tell the warden six months later—get license numbers, descriptions of persons and vehicles, and give this information to the warden as soon as possible. A call to the nearest sheriff's office is usually all it takes. Those who don't do their part to keep other hunters in line deserve to have their game stolen from them by these outlaws.

In Conservation, Leopold Saw a Creed of Ethics

By BILL WEEKES
Spartanburg, South Carolina

Aldo Leopold, Professor of Wildlife Management, University of Wisconsin, 1933-1948.

IT was a big, three-story white wooden house: a house of the old school, with a wide porch adorned with latticework.

The house used to be somebody's home, but during the 1950's it contained the books, artifacts and the thoughts of the University of Wisconsin's conservation school.

It was a stone's throw from the ultra-modern, massive brick building—comprising the classrooms and experimental pasteurization spaces of the university's school of dairy husbandry—which was Babcock Hall.

During the day the house stood in stark contrast to its neighbor; a homey dwelling of the past, satisfying the wants of a few; standing near the cold, sterile, business-like dairy hall dedicated to the future, accommodating the needs of an army of students.

At night, the house would take on a shade of gray, but just enough of the big square windows would be faintly lighted in relief to cast an aura of quiet dignity liken to nostalgia.

One had to shuffle up several steps before reaching the porch. Mounted in the middle of the door was a small, oblong knob one pulled to ring a bell. It no longer worked, but it didn't matter by then, for the big heavy door was always unlocked (so it seemed). One merely pushed it in like a door to any hall of learning, and one came to the foot of a flight of stairs inside. One ascended these stairs, concaved by years of traffic, to the second floor where the library was.

It was a tiny library, about the size of an average bedroom. Two fluorescent lights hung over a big oak table that dominated the room. Cramped bookshelves enclosed the visitor on three sides. Wall-to-ceiling windows took up the fourth side. They overlooked Babcock Hall.

Part of the wall opposite the windows was taken up by a portrait of a white-haired, benign looking likeness of a man. He wore thin-rimmed spectacles. His suit, fashioned with wide lapels, and his broad tie bespoke the garb of the 1940's.

The portrait was of Aldo Leopold, forester, naturalist, and founder of wildlife management. He had been

a member of the U. S. Forest Service in the Southwest and had studied botany and ecology as specialties. In the late 20's and 30's he made countless wildlife population surveys. He was a pioneer in this type of study. But this wasn't the man, only what he did.

The man was summed up in his words: "There are some who can live without wild things and some who cannot. . . . For us of the minority, the opportunity to see geese is more important than television, and the chance to find a pasqueflower is a right inalienable as free speech."

The statement is found in one of the books he wrote, one of the books wedged on the shelf not far from where his portrait hung. The book was written about his home county and was entitled *A Sand County Almanac* (Oxford University Press).

The book not only gives expression to some of Leopold's philosophical concepts, but also mirrors what occupied his mind, what he got a kick out of noticing.

His "bag" was the outdoors and anything that grew there or lived there naturally. He was intimate with the habits of wildlife and its habitat.

Each month means a new chapter in nature's scheme and man's relationship in it. January means the hibernating skunk will soon uncurl and leave his den, his trail easily discernible in the snow. It is a time when one can see the pines browsed by deer. February brings blizzards that tear down trees. Their rings are nature's history book.

"Indeed, it is all too clear that every surviving oak is the product either of rabbit negligence or of rabbit scarcity."

Leopold cuts the fallen tree, reciting the year-by-year chronology of man in nature from the latest to the earliest—the dust bowl droughts of the 30's; the National Forest Law of 1927; the big sleet that ruined the elms in 1922; the marsh drainage in Wisconsin in 1913-16; the buck law in 1912; 1909 when the first smelt was planted in the Great Lakes; 1906, the first state forester taking office; 1899, the last passenger pigeon killed in the state.

And thusly would Leopold relate landmarks in nature.

With March comes the return of the geese, "the bereaved survivors of the winter's shooting, searching in vain for their kin." April brings the high water, swelling the enthusiasm of carp for filling every nook and cranny of newly submerged areas. The month witnesses the sky dance of the returning woodcock and May means dandelions and the flight-song of the upland plover.

June means fishing in the Alder Fork.

"How like fish we are: ready, nay eager, to seize whatever new thing some wind of circumstance shakes down upon the river of time! And how we rue our haste, finding the gilded morsel to contain a hook."

July means catching glimpses of prairie flowers.

"It is apparent that the backward farmer's eye is nearly twice as well fed as the eye of the university student or businessman," Leopold observed.

August is for wandering and noticing, and September is for listening to the calls and distinguishing the pitches of the birds.

October is for catching color and hunting grouse and partridge.

November is for chopping and thinking.

"When our remote ancestor invented the shovel, he became a giver; he could plant a tree. And when the axe was invented, he became a taker; he could chop it down. Whoever owns land has thus assumed . . . the divine functions of creating and destroying plants."

Leopold said the wielder of an axe has as many biases as there are species of trees on his farm and that if one chops and is a conservationist, he will be "humbly aware that with each stroke he is writing the signature on the face of his land."

December is the time for running rabbits in the snow.

"The rabbit is familiar with all of the ground between his bed in the meadow and his blitz-cellar under the woodpile. How else the beeline?"

He expands this to state that every farm is a textbook on animal ecology and "woodsmanship is the translation of the book."

December is also pine-planting time.

"Every species of pine has its own constitution, which prescribes a term in office for needles appropriate to its way of life."

Leopold realized wildness couldn't be cherished without part of its flavor dulled. "Parks are made to bring music to the many, but by the time many are attuned to hear it there is little left but noise."

He knew many landowners were hypocrites, paying lip service to conservation, but doing what they well liked on their own home ground.

He saw wilderness as what it surely is, a resource that is always shrinking, never growing. It can be preserved if it is recognized as a cultural value. This requires the intellectual humility that recognizes the need for man to return from time to time to his natural rootage.

Leopold fought for the recognition of a land ethic. This could be extended to an Old Testament type of command—Thou Shalt Not Despoil Land.

The ethic does not deny use of resources, but rather advocates the perpetuation of their replenishment. It implies respect for the land from those who enjoy it. Conservation is the tool to this morality. Conservation reflects the harmony between man and land.

"The problem we face is the extension of the social conscience from people to land."

Leopold died 25 years ago this April. He died helping fight a grass fire on his neighbor's land in Wisconsin.

SHADBUSH

By ELIZABETH MURRAY
Charlottesville

Illustrated by Lucile Walton

THIS is a wonderful part of the world for wild flowering shrubs. In England the most exciting things in the spring are the little wild flowers, the primroses, cowslips, bluebells and wild orchids. In Virginia the flowers share honors at least equally with the shrubs. And the very first shrub to show any bloom around here in the spring is the shadbush, *Amelanchier canadensis.* The white flowers appearing in the lower layers of the woods look like little drifts of snow—and may, in fact, be intermingled with patches of snow, since they bloom so early that they are sometimes surprised by a late winter storm. We start watching for the flowers in late February and are usually rewarded at least by early March. If the spring is a cool one, shadbush may flower until May. In June it produces a purplish berry, like a small apple and known technically as a *pome.* This is edible but rather tasteless, although many birds do not agree with the latter judgment. If it is not eaten by something, the berry will persist on the plant all through the summer. When the leaves drop in the fall, next year's buds are already present, and stay on the plant all winter ready to give us one of our first real bits of spring.

Amelanchier belongs to one of the largest and most ubiquitous families of flowering plants, the Rosaceae. In this family, the flowers are almost always regular, with five sepals, five petals and numerous stamens inserted on the calyx. *Amelanchier* is a large and rather difficult genus since many of the species interbreed to produce confusing hybrids. Typically, *A. canadensis* is a shrub with several stems, or a small tree 5-30 feet high with a single trunk. The leaves are usually elliptical, pointed at the tip and with finely toothed serrations all round the edge. The white flowers are arranged in long, nodding racemes. The sepals are sharply reflexed at the tip, the petals are about ¾" long, thin and straplike, and there are numerous yellowish stamens.

Shadbush grows in all the eastern seaboard states from Georgia to Maine, and occurs westward to Iowa, Kansas and Missouri. It is widespread in thickets, woodlands and hillsides, preferring usually a fairly acid soil. It is a common early arrival in recently burned and newly populated clearings or other disturbed habitats. The wood of the shad tree is very hard and heavy (50 pounds to the cubic foot) and can be used for tool and umbrella handles, cabinet work, fishing rods and canes. In the carpentry trade it is known as lance wood.

The word *Amelanchier* comes from the Savoy region of France where it is applied to the medlar, a small sour apple quite closely related to our shadbush. Shad acquired its common name because it starts to bloom at about the same that the shad start to "run," that is, to come into the rivers to spawn, another early spring event. The shrub is known both as shadbush and shadblow and also has a number of other common names. May cherry and June berry obviously refer to the early berries which the plant produces, and the name serviceberry comes from Europe where it is used as the common name for the fruit of the service tree, *Pyrus domestica.*

Shadbushes can be transplanted if small plants are selected, and they are carefully dug up with a large part

Shadbush (Amelanchier canadensis).

of their root system in a good ball of earth. Like many shrubs after moving, they may make very little progress above ground for several years, concentrating (one always hopes!) on their roots and merely thickening their existing stems, but they will start to grow again above ground eventually.

January and February are the only really thin months in this state for lovers of the out-of-doors. We should all be grateful to the shadbush for a kind of official sign that this season is over for another year.

Know Your WARDENS

Text and Photos by F. N. SATTERLEE
Information Officer

JAMES C. WILSON
Assistant Supervising Warden (Education)
Daniel Boone District

James C., or "J. C." as his friends call him, was born in Caretta, West Virginia, where his father was a coal miner. In 1943 the senior Wilson purchased a farm in Russell County, Virginia, and moved his family to that area. Following graduation from Honaker High School in that locale, Mr. Wilson joined the U.S. Air Force and during his tour of duty spent 26 months at Misawa Air Base in Japan.

After completing his military service he worked at a variety of jobs, including a period as a member of the Virginia State Police in Buchanan County.

On February 1, 1959, he joined the Game Commission as a warden, thus fulfilling a long-term desire to work with wildlife, the outdoors, and law enforcement. His initial assignment was to Tazewell County.

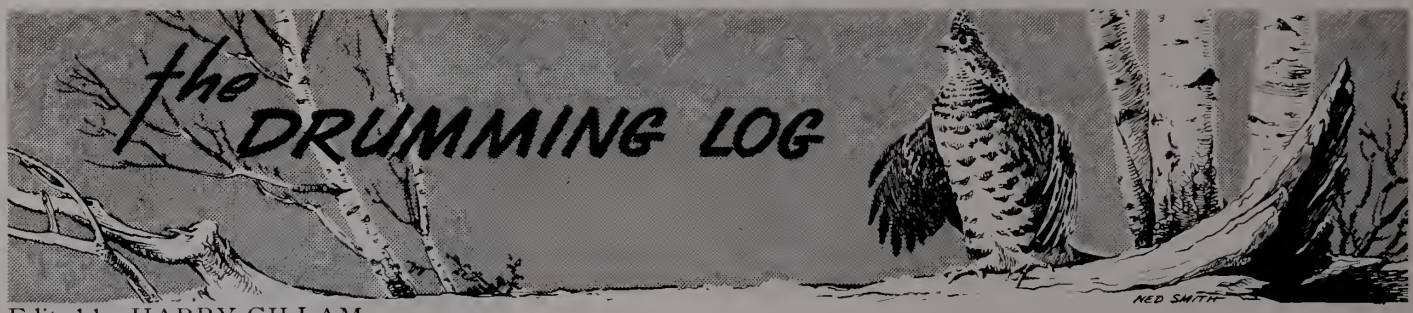
In 1968 he was promoted to Area Leader and in 1972 was elevated to the position of Assistant Supervising Warden (Education) for the Daniel Boone District. His greatest satisfaction, in his work with the Commission, in addition to working outdoors and in law enforcement, is the close association with young people, the landowners and wildlife. "J. C." is married to the former Catherine Stinnett. The couple has two children, and they make their home on Ben Bolt Avenue in Tazewell.

WILLIAM T. JAMISON
Assistant Supervising Warden (Law Enforcement)
Daniel Boone District

Giles County, Virginia, was the birthplace of Bill Jamison. He grew up in Pembroke, Virginia, and graduated from high school in that community. One of his earliest and most memorable experiences, and one that had an influence on his eventual decision to try and join the Game Commission, was the fourteen-month period that he spent as part of the Civilian Conservation Corps. The CCC was the 300,000 member organization created in 1933 by President Franklin D. Roosevelt in an effort toward applying the first major conservation management practices on nationally and privately owned lands. While with the CCC, Mr. Jamison helped to build trails and other outdoor-oriented projects and grew to love being with wildlife and nature.

In May of 1948 he applied and was accepted for the position of Virginia Game Warden with assignment to Giles County. During the 1960's he was selected as Virginia Game Warden of the year and was promoted to the position of Area Leader. In February of 1972 he was selected to become one of the first Assistant Supervising Wardens (Law Enforcement).

He is married to the former Lucy Havens of Pearisburg, Virginia, and they make their home in Pembroke.



Edited by HARRY GILLAM

Virginia Artist Offers Prints

Artist Peter Ring of Ashland, whose paintings have been featured on *Virginia Wildlife* covers, is offering a limited edition of his favorite paintings numbered and signed by the artist. The series includes 16" × 20" reproductions of black-capped chickadees, barred owl, and yellow-shafted flickers in a limited edition of 1000 each at $40 per print. A set of four smaller 12" × 16" prints in an edition of 2,500 each includes box turtle and Canada goose, chipmunk, barn owl and mockingbird. These are available signed and numbered with limited edition guarantee at $30 each. Get them from your local gallery or write to Wilderness Prints, P.O. Box 841, Ashland 23005, for a free 8-page color brochure with illustrations of all prints and the name of the dealer nearest you.

"Estuary—What a Crazy Place"

Without counting all of the bays, sounds, and inland waterways, the American coastline stretches for more than 88,000 miles. For most of us, our shorelines only mean beaches to play on and oceans for fishing and swimming. The vast wetland areas that lie adjacent to our coast have often been perceived as useless swamps and thus just right for commercial picking. Thousands of wetland miles have been drained, filled, built upon, and polluted. What these areas mean to us and why they may be our most valuable, vulnerable frontier is explained in a new, free 20-page booklet by Lee D. Salber, published by the 3-½ million member National Wildlife Federation. Estuaries, a major ecological segment of wetland areas and one of nature's greatest natural resources, are examined in "Estuary—What A Crazy Place." The usually unseen riches of estuarine waters are detailed, from the vitality of the sand bars and mud flats to the abundant sea life of the tidal marshes and ocean edges.

Although Salber emphasizes that estuaries are unique, complicated environments with different problems requiring different solutions, he does outline what the future of our nation's estuary system is and gives some sound, practical information on what citizens can do to help save it.

Single copies of "Estuary—What A Crazy Place" are available free by writing the National Wildlife Federation, 1412 Sixteenth Street, N. W., Washington, D. C. 20036. Additional copies are 20 cents each.

Companies Cooperate to Benefit Game

Transco's R. M. Honeycutt, left, Westvaco Woodlands Manager J. M. Crockett, J. R. Rothgeb of Transco, and Westvaco wildlife specialist C. L. Matheny check a cooperatively planted game food plot.

The above picture shows a game food planting on a Transcontinental Gas Pipeline right-of-way through Westvaco property in Louisa County.

This marks the second year of a joint effort between Westvaco and Transco to improve the quality of wildlife habitat along Transco's rights-of-way through Westvaco. This program ties in with Westvaco's larger program of managing wildlife and protecting endangered species on all of the company's land.

Since the pipeline constitutes a permanent edge or opening in the forest cover, it receives considerable usage by game animals in the area. By planting selected areas of the line in game food and limiting mowing operations along edges of the line wherever possible, game bird and animal populations should be increased.

Sections of Transco line on Westvaco properties in three Virginia counties were planted last spring. Plans call for continuing and expanding this program in the future.

Happy Bowhunter

Bowhunter A. D. Skinner of Wakefield downed this impressive trophy with a well placed arrow as it passed 15 yards from him. He estimates the deer weighed 170 pounds.

Edited by ANN PILCHER

Hunting Season a Real Success

Eleven-year-old Jeffrey Gray's 20-point buck, taken this past season in Rockbridge County with a 20 gauge shotgun, weighed 207 pounds. He and his brother Michael, 15, (sons of E. L. Gray of Chester) also bagged a nice turkey gobbler apiece.

Pittsylvania Plot Winners Feted

Michael Keith Guill of Ringgold, a junior at Dan River High School, earned top award in the 1972-73 Future Farmers of America wildlife feed patch contest of Pittsylvania County. Runner-up was Donnie Moore, third-year vo-ag student from Chatham High School, followed by William Woods of Tunstall High, Eddie Stowe of Blairs Junior High, David Gregory, Gretna Senior, and Leroy King, Gretna Junior High student. Cash prizes provided by the county Izaak Walton League chapter were presented at FFA banquets and other public events.

Over 400 county FFA students seeded one or more wildlife food patches, which lasted through the winter and furnished a variety of food for quail, wild turkeys, dove, deer, and rabbits, as well as song birds. Seed is furnished by the Game Commission. Pittsylvania had by far the largest number of animal feed patches of any county in Virginia, according to Commission biologists C. H. Shaffer and H. W. Myers, Jr., who judged the plots.

Youth Conservation Corps Act Extended

Before adjourning last October, the 92nd Congress amended the Youth Conservation Corps Act of 1970 to expand and make permanent the pilot program and provide additional funds. The Congress authorized an expenditure of $30 million in fiscal year 1973 and $60 million in 1974 to employ youths during the summer months to enhance natural resources in national forests, parks, and wildlife refuges. That session of Congress passed other important conservation measures, which included increasing the penalty for violations of the Bald Eagle Protection Act and amending the statute prohibiting the shooting of wild animals from aircraft.

Project SOAR Sails Along

We salute the Boy Scouts of America, now in their third year of Project SOAR (Save Our American Resources). The National Council, BSA, announced that major emphasis will be placed on the following highlighting efforts:

1. Scouting Keep America Beautiful Day, April 28, 1973, with participation from all youth and adult groups such as Girl Scouts, Campfire Girls, 4-H, Jaycees, and other private and governmental organizations.

2. Water-oriented learning experiences and action projects.

3. Tree planting in cooperation with the American Forestry Association to develop trees for lumber and other wood products, watershed and wildlife protection, and beautification.

4. Development of ecology workshops and conservation camps for summer.

5. Camporees emphasizing conservation in preparation for the jamboree youth forums.

6. Integration of environmental education and action projects with "citizenship" and "helping other people" programs.

Children Captivated by Boating

Late last fall literally a bushel of letters were delivered to Colonel W. O. Antozzi, Commander of Flotilla 32, U. S. Coast Guard Auxiliary, from youngsters attending the Robert E. Lee School in Petersburg.

A lesson in safe boating had been conducted for the entire school by Commander Landis Litchfield assisted by Mr. Earl Johnson, both members of the flotilla. The school children were apparently deeply impressed by the talk, movie and demonstrations which were part of the program. Countless illustrations of boats, some under stormy cloud-filled skies, accompanied the letters.

This impressive-looking official conservation and law enforcement display patch blanket earned a first-place ribbon for Troop 444 at the Chicago Area Council Boy Scout "Fun Fair" held in Chicago's McCormick Place last summer. Sharp-eyed readers might spot the Virginia Game Commission and Game Warden insignia near the bottom of the 6th row from left.

Edited by JIM KERRICK

A Glossary of Flotation Aids

LIFE PRESERVERS

Life preservers have superior buoyancy. They hold the wearer upright so that the face of a nonswimmer or unconscious person is above the water. Preservers come in both jacket and bib designs. They should be Coast Guard approved, so marked on the label, and international orange in color.

BUOYANT VESTS

Vests closely resemble the bib type preservers except that they have less buoyancy and do not hold the wearer quite as high out of the water. However, they do hold the wearer face up. Those with Coast Guard approval may be of any color. Because vests are less bulky than preservers, they are favored for fishing and active pursuits.

CHILDREN'S DEVICES

Children's preservers and vests are designed for persons weighing less than 90 pounds and within that limitation have the same flotation capability as the adult devices. An adult should never try to get by with a child's preserver nor should children be equipped with the adult size except in an emergency. The adult preserver does not fit snugly enough on a child to prevent his slipping out of it.

BUOYANT CUSHIONS

These serve the dual role of boat seat cushions and lifesaving devices. Since you sit on them, they are handy in an emergency, and they are easy to throw to a person in distress. But they do not give positive protection to children, non-swimmers and injured persons because they must be clung to in the water. Grasp the straps or put your arms through the straps and hug the cushion to your chest. Never wear the cushion on your back like a pack since it may turn your face under water.

RING LIFE BUOYS

All Coast Guard approved ring buoys are fitted with a grab rope and may be colored either white or orange. Approximately 60 feet of line should be attached to the grab rope on the buoy with the other end fastened to the boat or dock. Mount the ring buoy on brackets where it will be readily accessible, and when throwing it, take care not to hit the person in the water.

SPECIAL PURPOSE DEVICES

Several buoyant devices are designed for special uses such as water ski jump vests, ski belts, boat racing harnesses, hunter's vests and jackets, but none of them provide positive protection. Their lightweight construction allows greater freedom of movement than the bulkier life preservers. If you use one of the special purpose devices, you should be a good swimmer and wear it only when participating in the recreation for which it was designed. A device that carries the Yacht Safety Bureau's seal of approval also has been approved by the Coast Guard.

Fishermen and hunters often prefer a cool and lightweight vest which can be inflated by a self-contained CO 2 cartridge. It doesn't interfere with actions such as casting, rowing or swinging a shotgun and doesn't tire the wearer. However, no inflatable device has been approved due to the danger of hidden puncture. An inflatable vest should be worn with an approved buoyant device along as a backstop.

BE READY FOR EMERGENCIES

Test the flotation qualities of a life preserver before an emergency occurs, especially where children are concerned. Teach them how to put it on without assistance, then wade with them into chest-deep water and have them lift their feet off the bottom and float in a relaxed manner until they gain confidence in it. Preservers should be fitted and adjusted to the wearer and ready for use before venturing on the water. Life preservers should be worn by children and nonswimmers when underway in a small boat. When in hazardous waters or when overtaken by bad weather, everyone should don life preservers. The fit should be snug and all straps fastened.

CARE OF PRESERVERS

Lifesaving devices will last many years if they are given reasonable care. Dry them thoroughly before stowing in a dry, well ventilated place, not the bottom of lockers or deck storage boxes where moisture may accumulate. Keep them away from existing heat.

A life preserver is not intended for sport swimming and should never be used for pleasure purposes. And it should not be used as a boat fender or roughly treated.

A torn, rotted or otherwise defective preserver should be destroyed. Always cut a defective preserver into pieces or burn it, so no will use it.

IMPROVISE FLOTATION AIDS

When someone falls into the water, needs help, and there is no lifesaving device handy, *don't* jump in after him unless you have been trained in lifesaving. There's often something at hand that will serve as an emergency buoyant device: a thermos jug, a capped gas can or a plastic cooler. Empty the container contents. Re-cover the container and toss it within reach of the person in trouble.

The spare tire in your trunk is buoyant enough to support four or five persons even when mounted on the heavy steel wheel. Since it can't be thrown, swim and push the tire in front of you. Keep the tire between you and the victim to stay clear of his panicky clutch. When he has grasped the tire and calmed down, you both can paddle to shore.

Bird of the Month:

By JOHN W. TAYLOR
Edgewater, Maryland

The Red Crossbill

ALWAYS an irregular and unpredictable species, the red crossbill is today more paradoxical than ever. "An erratic winter visitor, which may appear anywhere, but is never common," we read in Dr. Murray's *Check-list of the Birds of Virginia,* published in 1952. Yet during recent years there have been spectacular "invasions" of these birds when hundreds showed up (122 were seen in one day at Chincoteague). In favored localities they have been seen in nearly every month, and there is strong evidence of breeding in the mountain counties. It is still impossible, however, to predict when and where they will appear.

Crossbills are eccentric in other respects. They may start nesting as early as mid-January or as late as mid-July. Some appear to wander the year-round, not nesting at all. And they are strangely unsuspicious of man, allowing very close approach.

The unusual bill is designed for wrenching off the scales of pine cones, exposing the seeds, a staple food item. Seeds of other conifers—spruce, fir and hemlock—are also relished. In hard times, they will turn to almost any vegetable food, from dandelions to beechnuts.

They feed in an odd, parrot-like fashion, using their claws very much like hands, and grasping branches with their bills as they climb about. They may hang upside down, again in the manner of parrots, to get at hard-to-reach cones.

The call-note of the crossbill, a two or three syllabled chatter, is many times the first indication of their presence. It is given while the birds are feeding, and also when flying over, often at surprising heights for a songbird. The full song, delivered in the spring, has impressed those few who have heard it. It has been described as a sequence of warbled passages, interspersed with canary-like trills and whistles.

The crossbill measures about seven inches, its thick neck and short tail giving it a rather stocky appearance. There are a variety of plumages. Males in breeding dress are most attractive, with a general body color of pinkish-crimson, lightest on the rump, darkest on the back. The wings and tail are brown. In young males, yellow-orange replaces the crimson, and the rump is yellow. Females are yellow-green, lighter on the belly, and mottled with brown on the back. Juvenile birds are quite different, streaked uniformly with dark brown.

BOAT OWNERS!

IS YOUR MOTORBOAT NUMBERED?

Under the Virginia Boating Safety Act, all motorboats regardless of their horsepower must have a Virginia registration number

NUMBERS . . .

Under-ten-horsepower motors no longer may be used on unregistered boats.

OBTAIN AN APPLICATION FOR

at any fishing or hunting license a city or county clerk, sporting goods boat dealership or marina

SEND APPLICATION

and $8.00 for three year registration t

BOAT SECTION

Commission of Game & Inland Fisheries
P.O. Box 11104 • Richmond, Virginia 23230